A history of cyanide at CFAC

By RICHARD HANNERS Hungry Horse News | Posted: Tuesday, June 2, 2015 8:35 am

Columbia Falls Aluminum Co. managers and state health officials have known about cyanide entering groundwater at the smelter property since at least 1979.

That's the year CFAC, then operating as the Anaconda Aluminum Co., drilled 13 monitoring wells and began sending regular reports to the Montana Department of Heath and Environmental Science.

Potliner

Cyanide is created in reduction pots when the carbon lining in pot bottoms combines under high temperatures over several years with nitrogen from the chemicals used to make bath, the liquid that dissolves alumina for reduction into aluminum metal. In 1998, the Environmental Protection Agency estimated that as much as 125,000 tons of spent potliner was produced in the U.S. every year.

The source of the cyanide at CFAC, however, was a matter of dispute for several decades. While company officials claimed contaminated wastewater from a soaking pit made its way into the groundwater, state officials believed it came from one of the landfills where spent potliner was deposited from 1955 to 1980.

Three decades of monitoring

One of the new French-made ECL pin-pulling cranes in operation at the Anaconda Aluminum Co. plant in November 1981.

The typical life span of a reduction pot at the Columbia Falls smelter increased from 3.2 years in 1983 to seven or eight years by 1995. It was estimated that each ton of waste carbon contained four to six pounds of sodium cyanide. The longer life span for the pots meant the amount of carbon waste generated by the plant's 600 reduction pots decreased from 16,700 tons per year in 1979 to 5,400 tons per year in 1995.

Soaking pit

Prior to 1978, pot bottoms were soaked in water to make it easier to separate the spent carbon from the brick and metal shell. The wastewater from the soaking pit was piped to a nearby boiler blowdown pond. That practice ended in 1978.

According to a 1988 report by Ecology & Environment Inc. for the EPA, the original landfill that had been used to hold spent potliner since the smelter fired up in 1955 was taken out of operation, capped and revegetated in 1980.

The company constructed an engineered landfill for pot bottom waste in 1980, the same year the EPA listed spent potliner as a hazardous material. The state issued the plant a wastewater discharge permit in 1984.

Starting in 1985, when Brack Duker and Jerome Broussard bought the smelter and formed CFAC, spent potliner was no longer buried on site. By 1995, the company was spending $750,000 a year transporting the waste to a certified landfill in Oregon.

Groundwater

In their 307-page report, Ecology & Environment Inc. told the EPA in 1988 that cyanide was detected in two groundwater monitoring wells near one of the plant's percolation ponds, but in lesser amounts. Cyanide was also found in small concentrations in the Flathead River but not in Cedar Creek, which runs through CFAC property.

In December 1991, the Montana Water Quality Bureau requested a report from CFAC describing how the company planned to deal with cyanide in groundwater that made its way to the Flathead River. The state wanted to determine the exact source of the cyanide and stop it from entering the river.

The cyanide concentration at seeps along the river bank was below the threshold for human health but above the standard for fish and aquatic life. CFAC's wastewater discharge permit, however, required CFAC to monitor river water at the U.S. 2 bridge, by which point cyanide was below detection levels.

The company was technically in compliance with its discharge permit, John Arrigo, a Water Quality Bureau official, said at the time. The seeps began before passage of a stream degradation law in 1982, he said.

Sources

What followed was several years of disagreement, with CFAC saying the cyanide came from the soaking pit and the state saying it came from the landfills. The state also wanted more monitoring wells installed after they reportedly found "a large front" of contaminated groundwater.

"They haven't soaked down potliners for 15 years, so why this annual surge?" Tim Byron, a Water Quality Bureau official, asked in April 1992.

CFAC spokesman Jack Canavan responded to the state's issues with the company's plans. Cyanide in surface water was broken down by sunlight and oxygen before it reached the Flathead River, he said.

"This is not an environmental disaster by any stretch of the imagination," Canavan said in May 1992.

The problem did not go away. In spring 1996, the EPA reported finding several visible seeps containing cyanide along the Flathead River. Cyanide levels in the seeps were below human health standards but exceeded two federal standards for aquatic life.

In March 1997, the Montana Department of Environmental Quality gave CFAC a deadline to quantify the amount of cyanide that was going into the Flathead River.

"I really don't think they have a groundwater problem, but we need to know the pounds per day of cyanide and fluoride that reaches the river," Byron said at the time.

Once the extent of the discharge was known, DEQ could include the effluent in CFAC's wastewater discharge permit, Byron said — so long as the discharge did not exceed state standards.

"The Flathead River is a pretty clean river," Byron said at the time. "The only way you could have a problem is if you were drinking groundwater from directly beneath the plant. Personally, I wouldn't want to be drinking that water."

In March 1999, CFAC paid the DEQ a $27,000 fine after sludge found in a landfill at the plant was found to contain cyanide. The suspected potliner material was deposited in the landfill in 1994, nine years after CFAC agreed to haul spent potliner out of state.

CFAC environmental manager Steve Wright told the Hungry Horse News at the time that the cyanide levels were "less than detectable" and was surprised by the fine.

"We don't necessarily agree it was hazardous waste," he said.